

COMPLETE LISTING OF ALL CLAIMS

1. (Currently Amended): A substantially hydrophobic active material particles adapted for formation of a battery electrode comprising:

a plurality of active particles, each of said active particles having an exterior surface area;

said plurality of active particles ~~formed~~ adapted for formation into an battery electrode with each of said particles electrically communicating with adjacent said active particles forming said electrode; ~~and~~

each individual active particle of said plurality of active particles, having a coating layer covering substantially all of said exterior surface area, said coating layer comprised of substantially hydrophobic coating material; ~~said coating material being substantially hydrophobic and;~~

whereby said active particles can be processed into said battery electrode using aqueous solutions.

2. (Currently Amended): The substantially hydrophobic material adapted for formation of a battery electrode of claim 1, ~~wherein~~ additionally comprising:

said plurality of active particles formed into a battery electrode; and

~~said coating material comprises a substantially hydrophobic polymer.~~

each of said active particles electrically communicating with adjacent particles formed into said electrode.

3. (Currently Amended): The substantially hydrophobic material adapted for formation of a battery electrode of claim 2, wherein additionally comprising:

said substantially hydrophobic polymer forming said coating layer is comprised of one or a combination of substantially hydrophobic polymers from ~~a~~ the group of substantially hydrophobic polymers consisting of EPDM and PVDF.

4. (Currently Amended): The substantially hydrophobic material adapted for formation of a battery electrode of claim 1 additionally comprising:

said coating ~~material~~ layer also containing ~~an~~ electrically conductive particles additive embedded therein.

5. (Currently Amended): The substantially hydrophobic material adapted for formation of a battery electrode of claim 2 additionally comprising:

said coating ~~material~~ layer also containing ~~an~~ electrically conductive particles additive embedded therein.

6. (Currently Amended): The substantially hydrophobic material adapted for formation of a battery electrode of claim 3 additionally comprising:

said coating ~~material layer~~ also containing ~~an~~ electrically conductive particles ~~additive~~ therein.

7. (Currently Amended): The substantially hydrophobic material adapted for formation of a battery electrode of claim 6, additionally comprising:

said electrically conductive ~~additive~~ particles being one or a combination of electrically conductive ~~additives~~ particles selected from ~~a~~ the group of electrically conductive additives including aluminum and carbon.

8. (Currently Amended): The substantially hydrophobic positive battery electrode of claim 1, wherein said coating material layer further comprises an ~~additionally comprising: said coating material also containing~~ ionically conductive particles embedded ~~additive~~ therein.

9. (Currently Amended): The substantially hydrophobic positive battery electrode of claim 2, wherein said coating material layer further comprises an ~~additionally comprising: said coating material also containing~~ ionically conductive particles embedded ~~additive~~ therein.

10. (Currently Amended): The substantially hydrophobic positive battery electrode of claim 4, wherein said coating material layer further comprises an ~~additionally comprising: said coating material also containing~~ ionically conductive particles embedded ~~additive~~ therein.

11. (Currently Amended): The substantially hydrophobic positive battery electrode of claim 5, wherein said coating material layer further comprises an ~~additionally comprising: said coating material also containing~~ ionically conductive particles embedded ~~additive~~ therein.

12. (Currently Amended): The substantially hydrophobic positive battery electrode of claim 6, wherein said coating material layer further comprises an ~~additionally comprising: said coating material also containing~~ ionically conductive particles embedded ~~additive~~ therein.

Claim 13 (canceled)

Claim 14 (canceled)

Claim 15 (canceled)

Claim 16 (canceled)

Claim 17 (canceled)

18. (Currently Amended): The substantially hydrophobic material adapted for formation of a battery electrode of claim 1, wherein said coating layer is comprised of aluminum. ~~additionally comprising: said coating material covering said exterior surface area being aluminum.~~

19. (withdrawn) A method of rendering particles of active materials used to form a battery electrode substantially hydrophobic, comprising the steps of:

choosing active material for the formation of a battery electrode therefrom; and

coating individual particles of said active material with a substantially hydrophobic coating.

20. (withdrawn) A method of rendering particles of active materials used to form a battery electrode substantially hydrophobic, comprising the steps of:

choosing active material for the formation of a battery electrode therefrom;

depositing individual particles of said active material in a solvent containing a substantially hydrophobic coating material;

allowing said coating material to adhere to the substantially the entire exterior surface of said individual particles; and

allowing said solvent to evaporate thereby leaving said coating material adhered to said individual particles and rendering said particles substantially hydrophobic.

21. (withdrawn) The method of claim 19 wherein said substantially hydrophobic coating is comprised of aluminum and deposited on said particles by vapor coating.

22. (withdrawn) The method of claim 20 additionally comprising the steps of:

mixing ionically conductive materials in said solvent; and
allowing said ionically conductive materials to adhere to said exterior surface as a component of said coating material.

23. (withdrawn) The method of claim 22 additionally comprising the steps of:

choosing one or a combination of said ionically conductive materials to be mixed in said solvent from a group of lithium salts consisting of LiF, Li₂CO₃, LiNO₂, LiBF₄, LIBOB, and LITFSI.

24. (withdrawn) The method of claim 20 additionally comprising the steps of:

mixing electrically conductive material in said solvent; and

allowing said electrically conductive material to adhere to said exterior surface as a component of said coating material.

25. (withdrawn) The method of claim 22 additionally comprising the steps of:

mixing electrically conductive material in said solvent; and
allowing said electrically conductive material to adhere to said exterior surface as a component of said coating material.

(withdrawn)

26. (Currently Amended): The substantially hydrophobic material adapted for formation of a battery electrode of claim 1, wherein said coating layer covering said exterior surface area of each of said particles has a ratio of coating weight to particle weight between 0.1% and 20%.

27. (withdrawn) The method of rendering particles of active materials of claim 19 wherein said substantially hydrophobic coating is coated on the active particles in a ratio of coating weight to active particle weight between 0.1% and 20%.

28. (withdrawn) The method of rendering particles of active materials of claim 19 wherein said substantially hydrophobic coating is coated on the active particles in a ratio of coating weight to active particle weight between 0.1% and 5%.

29. (withdrawn) A method of rendering particles of active materials used to form a battery electrode substantially hydrophobic, comprising the steps of:

choosing active material for the formation of a battery electrode therefrom;

spraying the individual particles of said active material with a solvent containing a substantially hydrophobic coating material;

allowing said coating material to adhere to the exterior surface of said individual particles; and

allowing said solvent to evaporate thereby leaving said coating material adhered to said individual particles and rendering said particles substantially hydrophobic.

30. (withdrawn) The method of claim 29 wherein said substantially hydrophobic coating material also contains one or a combination of additives from a group of additives consisting of electrically conductive additives and ionically conductive additives.

31. (withdrawn) The method of claim 30 wherein said ionically conductive additives include one or a combination of ionically conductive additives from a group of ionically conductive additives consisting of LiF, Li₂CO₃, LiNO₂, LiBF₄, LIBOB, and LITFSI.

32. (new) The substantially hydrophobic material adapted for formation of a battery electrode of claim 1, wherein said plurality of active particles are formed of lithium metal oxides.

33. (new) The substantially hydrophobic material adapted for formation of a battery electrode of claim 2, wherein said plurality of active particles are formed of lithium metal oxides.

34. (new) The substantially hydrophobic material adapted for formation of a battery electrode of claim 3, wherein said plurality of active particles are formed of lithium metal oxides.

35. (new) The substantially hydrophobic material adapted for formation of a battery electrode of claim 4, wherein said plurality of active particles are formed of lithium metal oxides.

36. (new) The substantially hydrophobic material adapted for formation of a battery electrode of claim 5, wherein said plurality of active particles are formed of lithium metal oxides.

37. (new) The substantially hydrophobic material adapted for formation of a battery electrode of claim 6, wherein said plurality of active particles are formed of lithium metal oxides.

38. (new) The substantially hydrophobic material adapted for formation of a battery electrode of claim 7, wherein said plurality of active particles are formed of lithium metal oxides.